Breakout session: The Learning System

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Supporting better quality health and social care for everyone in Scotland
What is a “Learning System”? 

2 minute discussion
What is a learning system?

• Definition of learning?
  – (the acquisition of) knowledge acquired through study, experience, or being taught

• Definition of system?
  – a set of things working together as parts of a mechanism or an interconnecting network; a complex whole
  – an interdependent group of items, people, or processes working together toward a common aim
The Learning Healthcare Project 2015

• Definition (Institute of Medicine 2007)
  – Science, informatics, incentives, and culture are aligned for continuous improvement and innovation, with best practices seamlessly embedded in the delivery process and new knowledge captured as an integral byproduct of the delivery experience
Learning Health System model

from: Charles P. Friedman & Josiah Macy, University of Michigan
Learning healthcare system examples

- Tracking of patient outcomes
- Predictive modelling
- Real world data collection

Patients like mine
IHI Learning systems for Improvement

Conceptual model for Learning System selection

- Shared Aim
- Optimal Learning Model
- Nature of Facilitation
- Nature of Change

Learning system components:
- An explicit theory or rationale for system changes
- An aim or purpose
- Measurement plan and plan for sharing results
- Iterative testing (e.g., Plan-Do-Study-Act [PDSA] cycles, sequential testing of changes, Shewhart time series charts)
- Informative cases to “act with the individual; learn for the population”
- Leaders to manage and oversee the learning system

Source:
https://tinyurl.com/y6ba226w
## IHI - From concept to reality

<table>
<thead>
<tr>
<th>Concept</th>
<th>Reality</th>
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<tbody>
<tr>
<td>Leadership</td>
<td>Training and succession planning for leadership</td>
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<td>Time spent on quality and safety at exec and board meetings</td>
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<td>Reviewing learning boards and addressing problems</td>
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<td>Transparency</td>
<td>Learning boards integral to daily work creating operational transparency</td>
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<td>Senior leadership review of learning boards</td>
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<td>Reliability</td>
<td>Visualisation of processes and segmented approach to achieving reliable care</td>
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<td>Improvement and measurement</td>
<td>All staff knowledge of improvement method(s)</td>
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<td>Continuous learning</td>
<td>Data is shared widely and transparently</td>
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<td>Time and resource invested in learn from what works and what doesn’t</td>
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<td>Solutions are sought from beyond the organisation</td>
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Learning system for QMS

High-level Quality Management System Framework (working draft 2)

**Learning System**

- Measurement system that enables learning about what is and isn’t working (qualitative and quantitative)
- Processes in place that support the appropriate use of evidence
- Individuals and services working on similar challenges are enabled to learn together (learning networks)
- System for identifying the bright spots and assessing the generalizable learning
- Reflective/reflexive practice is valued and enabled
Learning system for QMS

- Service challenges
- Data analysis
- Evidence Reviews
- Stakeholder intelligence
- 90 day process
- PDSA
- CoP
- Theory of Change
- Self-evaluation
- Stakeholder feedback
- Programme evaluation
- Programmes
- Measurement
- Formal case studies
- Reflective practice
- Generalisable learning
Learning Systems across NHS Scotland

Improvement Programmes

Working together

The ihub runs a number of national programmes focused on supporting our health, social care and housing partners to deliver improved health and wellbeing outcomes for people in Scotland.
An interdependent group of items, people, or processes working together toward a common aim
Learning system for QMS

High-level Quality Management System Framework (working draft 2)

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Practical example of application through our work
Total rate of Cardiac Arrest for 13 hospitals which have reported consistently from Feb '13 to Feb '19

Baseline Median 1.82

Median 2 = 1.68

Current Median 1.26

Reduction from Baseline = 31%
Cardiac Arrest Rate

Baseline Median 3.69
Current Median 1.93
Reduction from Baseline = 48%
## Appropriate use of evidence

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<tr>
<th>Aim</th>
<th>Primary Drivers</th>
<th>Secondary Drivers</th>
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| People with physiological deterioration in acute care will have a   | Early, anticipatory | • Anticipatory care planning in Community Care  
| structured response and person centred care                         | planning and person | • Patient and family at the centre of decisions and planning  
|                                                                     | centred care       | • Reliable communication across care pathways  
|                                                                     |                  | • Assessment of functional ability, health trajectory and detection of limited reversibility  
|                                                                     |                  | • Reliable implementation of national DNACPR policy  |
| Reliable recognition of acute deterioration                         | Reliable recognition | • Accurate observations using NEWS  
|                                                                     | of acute deterioration | • Observations are performed at correct frequency  
|                                                                     |                  | • Healthcare staff are trained in recording of observations and escalation process  
|                                                                     |                  | • Healthcare staff use NEWS as an adjunct to clinical knowledge in recognition of acute deterioration  |
| Structured response to acute deterioration                         | Structured response | • Screen for all causes of deterioration including sepsis, and initiate Sepsis Six if appropriate  
|                                                                     | to acute deterioration | • Appropriate care givers meet, agree and document a plan including frequency of observations and review time  
|                                                                     |                  | • Ensure timely review by appropriate decision maker according to local triggers  
|                                                                     |                  | • Monitor accurate fluid balance  
|                                                                     |                  | • Document treatment escalation plan (after discussion with patient and family where appropriate) including resuscitation status, senior review and goals of care  |
| Structured review of acute deterioration                           | Structured review  | • Risk of deterioration is considered with appropriate care plan documented  
|                                                                     | of acute deterioration | • Limited reversibility is considered and documented in people at risk of acute deterioration  
|                                                                     |                  | • Treatment escalation plan is reviewed and updated, including DNACPR where appropriate  
|                                                                     |                  | • Communication with patient and family on management plan  |
| Reliable communication within and across multidisciplinary teams   | Reliable communication within and across multidisciplinary teams | • Hospital huddles and ward safety briefs highlight deteriorating patients & describe plan  
|                                                                     |                  | • Structured wards round in acute care – reliable review of treatment escalation plan  
|                                                                     |                  | • Reliable ongoing patient and family communication that informs treatment escalation plan  
|                                                                     |                  | • Use SBAR to handover across MDT and care teams  |
| Create a learning system                                           | Create a learning system | • Mortality and morbidity reviews that inform improvement plans  
|                                                                     |                  | • Review of cardiac arrests/2222 calls to inform improvement plans  
|                                                                     |                  | • Involve resuscitation officers in education and improvement  
|                                                                     |                  | • Organisational priority: Executive Sponsorship, Clinical Leadership, Executive Lead for Palliative Care and QI support  
|                                                                     |                  | • Consider use of electronic track and trigger tools to actively measure and manage at risk patients across the organisation  |
Learning Networks
Bright spots and generalizable learning

Special NHS Boards

- NHS Education for Scotland
- NHS National Services Scotland
- Healthcare Improvement Scotland
- Scottish Ambulance Service

NHS Health Scotland
NHS National Waiting Times Centre
NHS 24
The State Hospitals Board for Scotland
“SPSP has contributed to sustained improvements across Scotland and has become a truly national safety movement” @JeaneF1MSP celebrating the fantastic work of #SPSP @QualityForum quality2019 @online_his @ihubscot
Reflective/Reflexive practice

Analysis of the data

Comparison with other Hospitals/Boards

Regular review with HIS

Review and cleansing of the data
Since 2013, there has been a 27% drop in the cardiac arrest rate in general ward areas in 15 Scottish hospitals who have reported data to SPSP. This means that on average, there are 18 fewer people per month not suffering from this harmful and distressing experience in hospitals.”
Discussion - two way sharing of learning

Reflections on what you’ve heard
How might you apply this in your own organisation?
Lessons from your own work in this area
What can we learn from you?
Keep in touch

Twitter: @online_his
Email: comments.his@nhs.net
Web: healthcareimprovementscotland.org
Blog: blog.healthcareimprovementscotland.org